

# Heavy Oil's New Best Friend

*Gushor Inc. is changing the way heavy oil is analyzed, say its founders. A growing list of clients big and small would appear to agree*



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Dozens of companies have emerged from the labs of Alberta universities with great ideas and knowledge. But how many have been able to drive their annual sales from zero to several million dollars within a mere three years?

A Calgary fluid analysis and reservoir engineering group known as Gushor Inc. turned the trick — and without financial backers. A self-reliant little team, Gushor's founders dug deep into their own pockets to finance the startup three years ago. They've already completed hundreds of projects for more than 75 clients,

primarily heavy-oil producers.

"We've done work for all the super-majors as well as for smaller players," says Ian Gates, P.Eng., Gushor's director of engineering and an associate professor at the University of Calgary.

What sort of work have they built their success upon? "On the geochemical side, we work in oilsands reservoir fluid characterization, evaluating the quality and viscosity of heavy oil. We analyze core samples and perform wellsite evaluations," Dr. Gates explains.



## PLUNGING AHEAD

The patented mechanical extractor shown here is called The Plunger, which Gushor calls a game changer when it comes to removing oil from a core.

"The rest of our workload relates to reservoir engineering simulation work, process design and energy analysis for steam-assisted gravity drainage projects, including cyclic steam stimulation."

The team has not needed to advertise. Positive word-of-mouth has led to virtually all of Gushor's service contracts, largely because a homegrown set of technologies has stood up to every test, supplying analytic data for some of the most hard-to-read heavy oil reserves in Canada.

## The Buzz Grows Louder

In Dr. Gates' words, Gushor has developed the means of "understanding these processes that's a little different from the perceptions of the folks downtown." From the start, the company dedicated itself to research and development, coming up with an interesting series of practical applications to put Gushor on the map.

Among these are a patented mechanical extractor developed initially at U of C and known as The Plunger, a device described by Mr. Gates as "a game-changer in every way. Normally, to get oil out of a core you would centrifuge it. That can mean hours or days to acquire a sample. With this tool, we can get a sample in 20 minutes, without using solvents or losing light ends [volatile oil compounds] from the sample.

"We can even do it at the rig site in real time and provide viscosity logs within a few hours of drilling, ideal for setting horizontal well placements."

The company has also developed an arsenal of proprietary tools and processes to help clients get the most from their heavy-oil assets. These include a geochemical process called GVisc, which relies on a "specially tailored solvent cocktail" to preserve accurate measurement of oil viscosity with little light-end loss, while separating the impact of the solvent on oil phase viscosity.

"I don't want this to sound like boasting, but we're revolutionizing the analysis of heavy oil," Mr. Gates continues. "Five years ago, nobody

was thinking about the geochemistry of bitumens and its importance with respect to recovering the asset from the ground."

Times are changing. "Now it's becoming an integral part of how these companies are thinking about their reservoirs. And word is spreading," Dr. Gates says with a smile.

Indeed it is. Word has certainly travelled as far as the Alberta Science and Technology Leadership Foundation, which nominated Gushor for a 2009 ASTech award for outstanding commercial achievement.

Although Gushor spun out of the University of Calgary and makes use of incubator facilities there, the private firm remains independent. Its founders include a number of geoscientists as well as engineers, including founding chief executive Jennifer Adams, P.Geol., who recently accepted an offer to work for a Houston-based multinational.

Ms. Adams receives much of the credit for getting the company off the ground.

"Jennifer really helped bring things together. She is very entrepreneurial and helped encourage us more traditional academics to take our technical skills to the marketplace," asserts current CEO Steve Larter, who doubles as professor of petroleum geology on campus.

## Integrated R&D

Another undoubted key to the company's success is its integrated commitment to research and development, seamlessly meshing engineering and geoscientific skill sets. "You need people with hybrid skills to deal with what is the most complex oil resource on the planet," Dr. Larter says.

Concludes Dr. Gates: "In terms of R&D, most big companies have a separate reservoir engineering research group over here and a geoscience research group over here. They may talk to each other but they often don't.

"With us, there are no boundaries. We're all trying to solve the same problems."

## Naturally Resourceful

### What's New at Stewart Weir?

Not too much, yet a lot. We are still focusing on our core values — quality, meeting client expectations, and staff fulfillment. We believe that these core values will allow our personnel and our firm to remain sustainable and we think our clients value that.

On the new side, we have implemented a Quality Management System (QMS) that includes processes for client feedback and continuous improvement. We have applied for ISO 9001:2008 certification. We continue to move ahead with new plans, ideas, and initiatives.

We've been impacted by the Alberta economy, but the province still leads the Nation and continues to grow and prosper. We believe we are part of that. Stewart Weir has been around since 1912 and, with a strong commitment to our clients and our staff, we firmly believe that we will continue to thrive for years to come.

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